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SAN JOAQUIN POWER

Stockholders' Annual Number

San Joaquin Power Magazine

—

JANUARY, 1927

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Volume IX Number 1

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San Joaquin Light and Power Corporation

Fresno, California

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DIRECTORS

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MURRAY BOURNE
F. L. DAME
F. W. DOOLITTLE
W. E. DURFEY
GUY C. EARL
EDWIN GRUHL
A. C. JOY
WM. B. JOYCE
E. P. SMITH
A. EMORY WISHON
A. G. WISHON

OFFICERS

A. G. WISHON	*President*
A. EMORY WISHON	*Vice-President and General Manager*
F. W. DOOLITTLE	*Vice-President*
J. B. BLACK	*Vice-President*
W. E. DURFEY	*Secretary and Assistant Treasurer*
ROBERT SEALY	*Treasurer*
ERNST E. BEHR	*Comptroller*
MURRAY BOURNE	*General Counsel and Assistant Secretary*
M. S. BABCOCK	*Assistant Secretary and Assistant Treasurer*
H. V. JOHNSON	*Assistant Secretary and Assistant Treasurer*
F. H. PISKE	*Assistant Secretary*
C. D. BURDICK	*Assistant Treasurer*
A. B. CARPENTER	*Auditor*
V. R. FRAZEE	*Assistant Auditor*

EXECUTIVE COMMITTEE

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F. L. DAME
F. W. DOOLITTLE
EDWIN GRUHL
A. EMORY WISHON
A. G. WISHON

Directors and Officers Elected February 10, 1927

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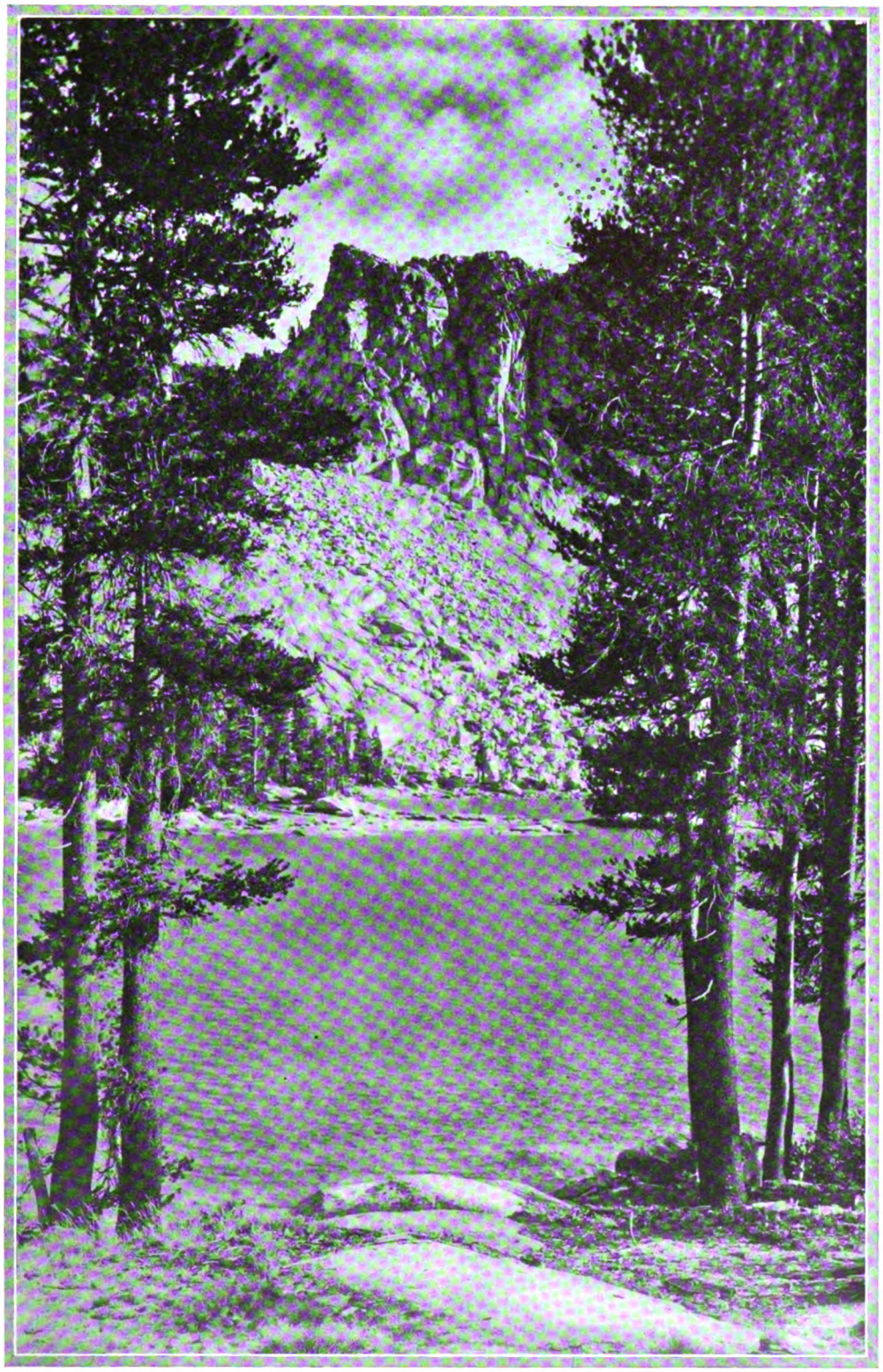

Just under the shadow of Le Conte divide, which separates the water sheds of the Kings and San Joaquin Rivers, is Devil's Punch Bowl, a lake of azure blue surrounded by junipers and low pines.

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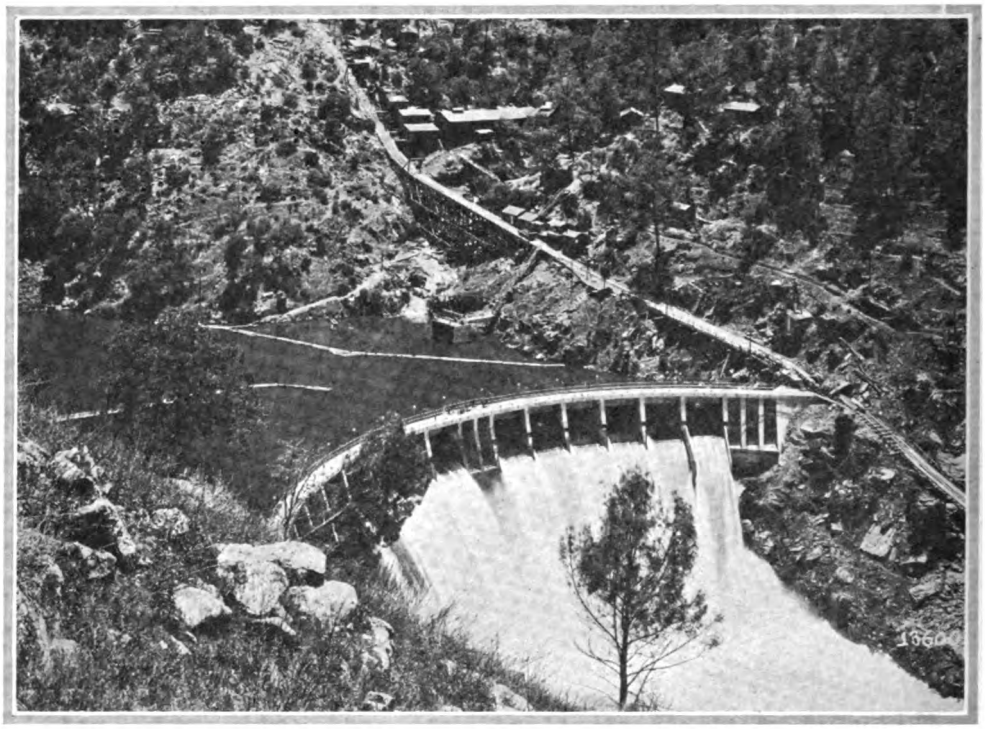

Kerckhoff Dam, 125 feet high and 570 feet long at the crest, is a concrete structure across the San Joaquin River 2½ miles below Power House No. 1. It diverts water through a 3½-mile tunnel to Kerckhoff Power House.

Annual Report of the President

To the Stockholders of San Joaquin Light and Power Corporation:

THE increases in gross revenue and net earnings for the year 1926, as shown in the accompanying Income Statement, reflect improvement during the year in economic conditions in the territory served by the Company.

Precipitation in the mountains during the year was somewhat below normal, and the storage reservoirs of the Company did not entirely fill with water which could be used in the generation of power. This decreased the output of the Company's hydro-electric plants and, together with the fact that the Merced Irrigation District did not complete its dam and power house at the time expected, made it necessary to generate more power by steam than was originally contemplated. This condition was largely overcome, however, when the 220 KV tie line connecting the systems of the Great Western Power Company of California and the San Joaquin Light and Power Corporation was completed and placed in operation in July. This tie line extends from the Brighton Substation near Sacramento to the Wilson Substation near Merced.

Total output of electric energy for the year 1926 was 623,690,150 kilowatt hours, of which 1,121,250 kilowatt hours were absorbed by companies outside our own system. The greatest increase in electric sales for any class of business, viz. 28.6 per cent, was in the amount of energy used for agricultural power, due principally to the installation of pumping plants to supplement gravity irrigation because of the deficient rainfall during the year.

On December 31, 1926, service was being rendered to 70,317 consumers of electricity.

As a result of the active campaign of the

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Tule River Power House, 21 miles east of Porterville, is the only plant of San Joaquin Power on Tule River. It has a capacity of 6,850 horsepower generated in two units operating under a head of 1,523 feet.

Sales Department to add electric load to existing lines, the ratio of cost of extension per dollar of added revenue was considerably improved.

Energy supplied to the Midland Counties Public Service Corporation amounted to 13.3 per cent of the total sales for the year.

At the close of 1926, gas service was being supplied to 10,394 consumers in the cities of Bakersfield, Merced and Selma, and 1,086 water consumers were being served in Selma.

REVENUE AND OPERATING EXPENSES

Total operating revenues of $8,740,-232.61 were $945,726.63 or 12.13 per cent greater than in 1925, increases being reported in all departments. Total operating expenses amounted to $3,988,631.27, an increase of $502,754.56 or 14.42 per cent. The large increase in operating expenses was occasioned chiefly by considerably greater expenditures for purchased power and for fuel for steam generated power because of lessened output of the hydro-electric plants, and by substantially larger charges for taxes due to increased gross revenues and change in method of accruing Federal Income Taxes. These formerly were charged in the year in which paid, but are now accrued in the year in which income is earned.

As a result of the installation of a new generator at the Merced gas plant in 1925, substantial economies in gas production costs have been effected.

Net interest charges decreased $179,-167.99 or 8.50 per cent, due primarily to considerably larger credit on account of interest charged to capital account. As the new Balch plant has now been placed in operation, interest on the substantial investment therein will hereafter be charged against income. Accordingly, net interest charges may be expected to increase, partly offset, however, by savings resulting from the refunding of high interest rate bonds referred to later in this report.

Credits to Depreciation Reserve amounted to $1,092,369.38, an increase of $111,269.32 over the preceding year. This is in accordance with the Company's established policy of providing adequately for retirement of its plants and systems.

Net earnings for the year, after deduct-

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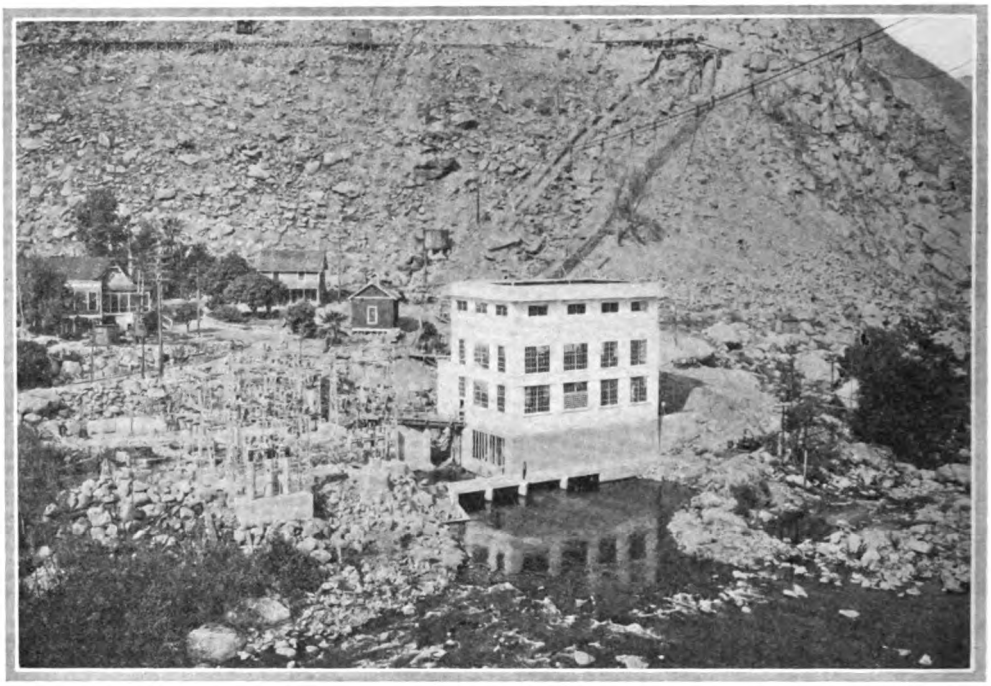

Kern Canyon Power House, sixteen miles southeast of Bakersfield, has a capacity of 14,133 horsepower from a single unit operating under a head of 272 feet. Water is diverted through a tunnel 8,500 feet long.

ing all operating expenses, interest charges and depreciation, were $1,869,307.26. Dividends were paid at the rate of 7 per cent on prior preferred and Series A preferred stock and at the rate of 6 per cent on the new Series A prior preferred 6 per cent stock and the Series B preferred stock. Total dividend disbursements during the year amounted to $1,310,791.83. No dividends have yet been paid on the Common Stock. Net increase in Surplus as at December 31, 1926, was $558,515.43.

PLANTS AND PROPERTIES

Capital expenditures for the year 1926 aggregated $5,893,831.95 as compared with $3,690,378.43 for the year 1925.

Construction work on the Balch power project has progressed to the completion of the initial installation of 42,200 horsepower, which was dedicated and placed in operation January 29, 1927. The heavy covering of snow on the mountains, which furnishes the run-off of the North Fork of the Kings River, indicates a favorable operating condition for the Balch plant during 1927. During 1926, 704 miles of transmission and distribution lines were constructed, including 110 KV steel tower and steel pole line from the Kerckhoff power plant to Corcoran substation; completion of 110 KV steel tower line between the Balch power house and Sanger substation; 110 KV steel pole line from Midway steam plant to Rio Bravo substation; 66 KV wooden pole line from Connors Corner to the new Tejon substation south of Bakersfield, and a similar 66 KV line from the Kingsburg substation via Hanford to Guernsey Corner. These transmission lines will be used in the distribution of power from the new Balch plant and of power received from the Great Western Power Company of California over the new Brighton-Wilson tie line.

Four new substations were built during the year at Parlier, Rio Bravo, Tejon and Hanford. In addition, the locations of three substations were changed and two substations were temporarily abandoned. The construction of the new substations and the changes in location of those already in operation were necessary because of changing load conditions, increasing demands for

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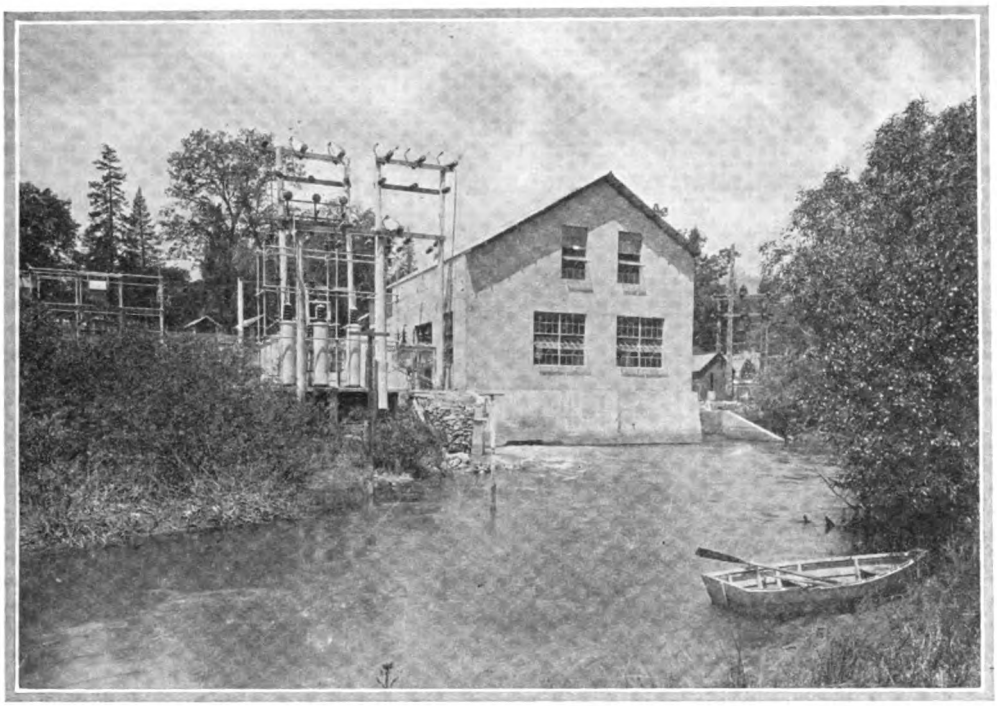

San Joaquin Power House No. 3 is on the north fork of the San Joaquin River sixteen miles above No. 1. It was the second plant of the Crane Valley System to be constructed, originally 1,500 horsepower and now 5,780 horsepower.

service, and entering new districts where possibilities of developing additional power load are favorable. Capacities of several other substations were increased and changes made to improve voltage regulation.

The construction budget for 1927 calls for expenditures aggregating nearly $4,000,000, the principal items of which are additional generating capacity, construction of an afterbay below Balch power house, additional transmission and distribution lines and substations, and additions and improvements to the gas production and distribution facilities.

FINANCING

Approximately $4,300,000 par value of prior preferred stock was sold during the year, and the proceeds applied to the payment of $400,000 of serial bonds which matured March 1, 1926, and to the cost of additions to plants and systems.

In January 1927, $25,000,000 principal amount of Unifying and Refunding Mortgage, Series D, 5 per cent 30-Year Bonds were issued and sold, the proceeds to be applied to the redemption of all of the outstanding First and Refunding Mortgage 5 per cent and 6 per cent Bonds, aggregating $14,225,000 principal amount, and of Series A and C, 7 per cent and 6 per cent, Unifying and Refunding Mortgage Bonds, aggregating $8,500,000, and to reimbursement of the treasury for construction expenditures already made. As a result of this financing a saving in annual interest charges will be effected, and the position of the Unifying and Refunding Mortgage Bonds, which are now secured by a first lien on about 95 per cent of the Company's property, and by lien on the remaining property subject to $2,210,000 of underlying bonds, will be materially improved.

GENERAL

The Company's electric properties include 12 hydro-electric and 3 steam plants, with a total load carrying capacity of 220,758 horsepower, 50 substations with transformer installations totaling 284,715 kilowatts, and 7,124 miles of transmission and

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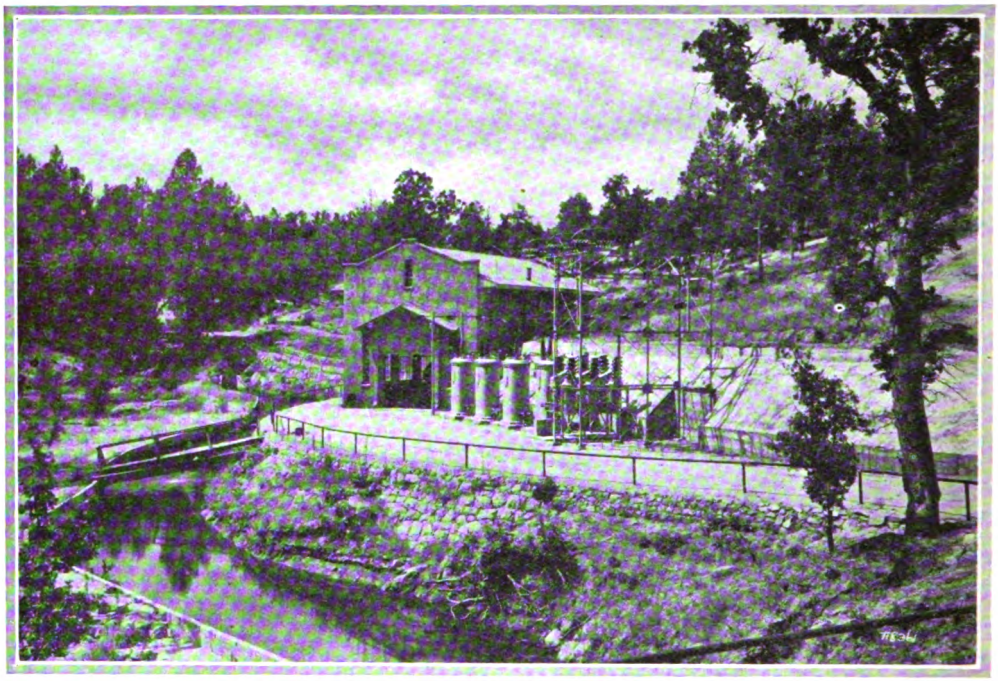

No. 2 Power House of the Crane Valley System uses water from Crane Valley reservoir for the third time in generating power. Capacity 4,150 horsepower, generated in one automatic unit operating under a head of 307 feet.

distribution lines. The gas properties include two manufacturing plants and a natural gas supply which serve three cities through systems comprising 174 miles of mains. Water service is supplied in Selma.

The entire output of the Merced Irrigation District's plant at Exchequer, aggregating 33,500 horsepower, is under contract to the Company for a period of 20 years, and 8,725 horsepower has been contracted for from the Don Pedro plant of the Turlock Irrigation District for a period of 15 years.

On July 4, 1926, the Brighton-Wilson tie line connecting the affiliated systems of the Great Western Power Company of California and the San Joaquin Light and Power Corporation went into operation. Since that time the tie line has been extensively used to the decided advantage of both Companies, and the benefits in operating efficiency and economy, already achieved and in prospect, evidence the wisdom of the project.

The very satisfactory responses to the Company's offerings of stock reflect the high and growing favor with which the stock is regarded by the residents of the territories served by the Company and by small investors generally in the State of California. Sales of Prior Preferred Stock during 1926 were made to 2,051 new stockholders. Of the total Prior Preferred stockholders of the Company, who numbered 13,958 on December 31, 1926, more than 68 per cent are resident within the territory served, and more than 97 per cent within the State of California; and more than 53 per cent own less than 5 shares each, while the average holding is approximately 12 shares.

Appended to this report are Comparative Income Statements for the years 1926 and 1925, and Comparative Balance Sheets as at December 31, 1926, and 1925.

Respectfully submitted,

President.

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SAN JOAQUIN LIGHT AND POWER CORPORATION

Income Account

	Twelve Months Ended December 31st 1926	December 31st 1925*
GROSS OPERATING REVENUE	$ 8,740,232.61	$ 7,794,505.98
OPERATING EXPENSES, MAINTENANCE AND TAXES	3,988,631.27	3,485,876.71
NET EARNINGS FROM OPERATION	4,751,601.34	4,308,629.27
SUNDRY EARNINGS	137,932.89	161,388.30
TOTAL NET INCOME	4,889,534.23	4,470,017.57
TOTAL INTEREST CHARGES	2,223,351.52	2,278,970.66
LESS INTEREST CHARGED TO CAPITAL	295,493.93	171,945.08
NET INTEREST DEDUCTIONS	1,927,857.59	2,107,025.58
NET BEFORE DEPRECIATION RESERVES	2,961,676.64	2,362,991.99
DEPRECIATION RESERVES	1,092,369.38	981,100.06
NET INCOME FOR DIVIDENDS	$ 1,869,307.26	$ 1,381,891.93

*Rearranged for comparison with 1926.

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SAN JOAQUIN LIGHT AND POWER CORPORATION

Assets

	December 31st 1926	December 31st 1925*
RIGHTS, REAL ESTATE, PLANT AND PROPERTIES	$70,340,003.87	$64,446,171.92
INVESTMENTS	62,107.50	245,454.16
CURRENT ASSETS		
Cash	356,927.61	2,985,490.77
Notes Receivable	605,793.62	608,396.03
Accounts Receivable	2,920,650.32	899,674.09
Material and Supplies	1,085,699.86	1,253,571.37
Miscellaneous Current Assets	6,747.59	49,495.19
TOTAL CURRENT ASSETS	4,975,819.00	5,796,627.45
SINKING FUND	446,211.81	671,016.22
DEFERRED CHARGES	2,020,606.04	2,091,155.24
DISCOUNT ON CAPITAL STOCK	1,884,102.00	1,696,143.00
TOTAL	$79,728,850.22	$74,946,567.99

*Rearranged for comparison with 1926.

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SAN JOAQUIN LIGHT AND POWER CORPORATION

Liabilities

	December 31st 1926	December 31st 1925*
STOCK		
Prior Preferred 7% Cumulative, Authorized $25,000,000, Issued	$11,648,700.00	$11,275,000.00
Prior Preferred Series A 6% Cumulative Authorized $50,000,000, Issued	3,842,100.00	
Series "A" Preferred 7% Cumulative, Authorized $18,500,000, Issued	6,447,200.00	6,438,700.00
Series "B" Preferred 6% Cumulative, Authorized $6,500,000, Issued	52,800.00	61,300.00
Common—Authorized $50,000,000 Issued	11,000,000 00	11,000,000.00
Payments on Capital Stock Subscriptions	230,579.23	183,767.17
BONDS	34,551,000.00	35,430,500.00
TOTAL CAPITAL LIABILITIES	67,772,379.23	64,389,267.17
MINORITY INTEREST IN CAPITAL AND SURPLUS OF SUBSIDIARY	5,508.22	5,926.33
CURRENT AND ACCRUED LIABILITIES		
Bond Interest and Other Accruals	1,427,451.62	1,053,338.95
Accounts Payable	504,015.39	957,708.44
Consumers' Deposits	90,371.07	87,997.24
TOTAL CURRENT AND ACCRUED LIABILITIES	2,021,838.08	2,099,044.63
CONSUMERS' ADVANCES FOR CONSTRUCTION	353,426.95	307,080.33
RESERVES	6,036,077.35	5,164,144.57
CAPITAL SURPLUS	356,269.29	356,269.29
SURPLUS APPROPRIATED FOR ADDITIONS AND BETTERMENTS	845,000.00	845,000.00
SURPLUS CLOSE OF YEAR	2,338,351.10	1,779,835.67
TOTAL SURPLUS AND RESERVES	9,575,697.74	8,145,249.53
TOTAL	$79,728,850.22	$74,946,567.99

*Rearranged for comparison with 1926.

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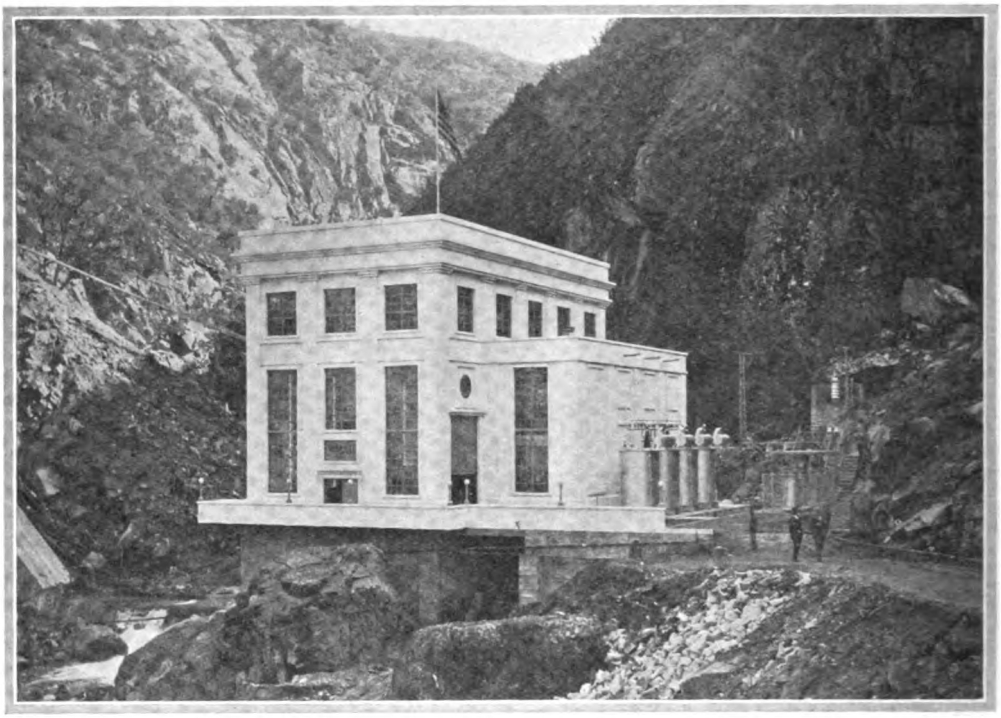

Balch Power House in a rocky canyon setting on the north fork of the Kings River is the first unit to be completed of the 490,000 horsepower Kings River Project of the San Joaquin Light and Power Corporation.

The Kings River Project

BALCH POWER PLANT is the first completed unit of a great hydro-electric project which will eventually develop a half-million horsepower. This project will be many years in the building, for other units will be added only as there is increased demand for electricity. But there is at least assurance that here in these mighty mountains through which rush the waters of Kings River, there is abundant potential power to meet the needs of the San Joaquin Valley over a long period of time. Completion of this project contemplates extensive storage of the river's flood waters. Reservoirs for this storage are to be above the proposed Pine Flat irrigation district reservoir, which will thus serve as a catch basin for all waters released from them. They will give to the irrigators under Pine Flat the benefit of 300,000 acre feet of water in excess of the capacity of their own reservoir.

The possibilities of power development on Kings River were first visualized by A. G. Wishon, president of the San Joaquin Light and Power Corporation, who made a reconnaisance tour over the territory of the river and its tributary streams in 1913. Other power plants were then either in course of construction or in contemplation, so no work was undertaken until 1917, when preliminary surveys were made.

Plans then mapped out and since changed only in minor particulars provided for a chain of nine power houses, six on the North Fork of the river and three on the North Fork's principal tributary, the West Fork, better known as Dinkey Creek. The North Fork was chosen for the first development because of certain advantages over West Fork, such as larger reservoir capacities in the upper elevations, and very steep grades in the streambeds, making the conduits comparatively short for high head plants.

The projected power houses, with their generating capacities in horsepower and

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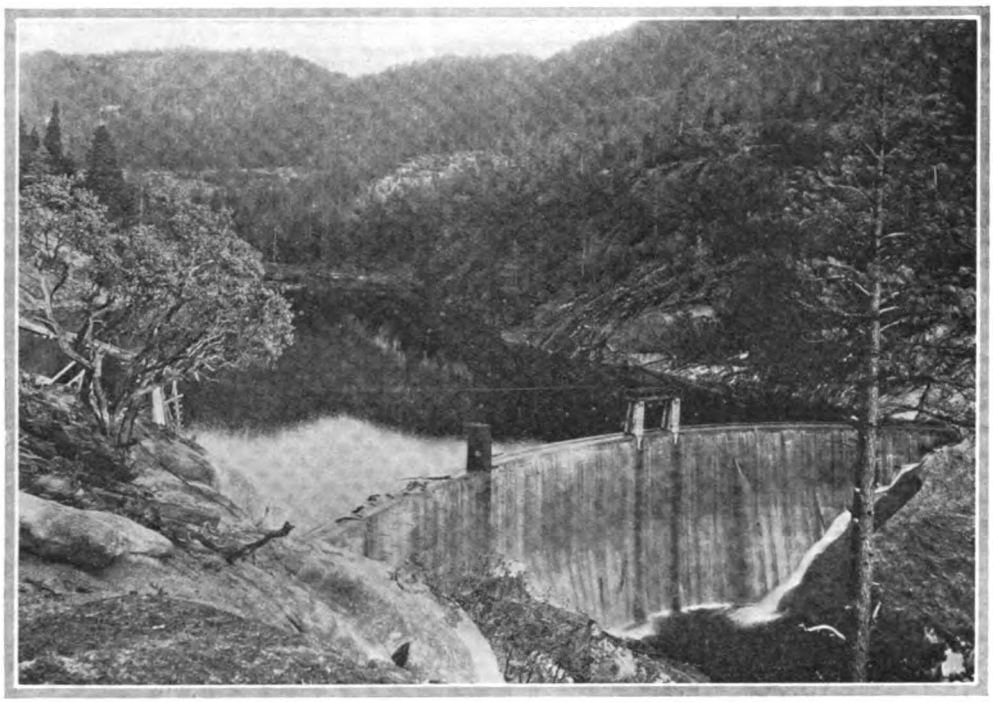

Diversion Dam, four miles above Balch Power House, retards for a moment the water of the north fork of the Kings River before diverting it through the tunnel to the Power House. Height 85 feet from bed rock, length 220 feet.

their elevation above sea level are as follows:

North Fork:

Helms plant, 55,000 horsepower, 6,550 feet.
Wishon plant, 11,000 horsepower, 6,300 feet.
Haas plant, 127,000 horsepower, 4,100 feet.
Balch plant, 151,500 horsepower, 1,719 feet.
Junction plant, 75,500 horsepower, 1,300 feet.
Kings River, 32,000 horsepower, 880 feet.

West Fork:

Peart plant, 4,300 horsepower, 5,380 feet.
Meyer plant, 6,300 horsepower, 5,380 feet.
Farnham plant, 33,000 horsepower, 3,820 feet.

Feeding these plants are to be four reservoirs. On the North Fork will be Helms Reservoir, with 102,500 acre feet capacity, at 8,170 feet elevation; and Lake Wishon, with 128,000 acre feet capacity, at 6,550 feet elevation. On the West Fork will be Meyer Lake, with 21,000 acre feet capacity at 6,850 feet elevation; and Peart Lake, with 54,500 acre feet capacity, at 5,650 feet elevation.

Further preliminary work was undertaken in 1920 with the building of a road which extends back to the site of the proposed Lake Wishon and which in its steepest mountain climbing has a maximum grade of six per cent. Much of this road is blasted into the face of solid granite cliffs.

Need of additional generating capacity in the immediate future became apparent in 1924, and early in 1925 work was begun on Balch plant, which is named after A. C. Balch of Los Angeles, formerly vice-president of the corporation and identified with its growth and progress for nearly a quarter of a century. It is a stream flow plant, operating by means of a diversion dam and without storage. Its present capacity is 40,000 brake horsepower, but it is so built as to permit the adding of three similar generating units, giving it ultimately 160,000 horsepower. This additional capacity, however, will be dependent upon the installation of storage reservoirs.

BALCH PLANT

Balch plant consists of a diversion dam four miles up stream, a tunnel, a steel penstock line, a power house, a transmission line 39 miles long and a compensating reservoir below the power house to equalize the flow of the stream.

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Hidden away on high plateaus of the Sierra Nevada mountains are numerous small glacial lakes from which flow tiny streams that add their bit to prolong the seasonal flow of the rivers below. These are sources of water supply for the Kings River Power development and for irrigation in the San Joaquin Valley.

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Roadways wind around the mountain sides following the river for a distance of twenty-five miles above Balch Camp. Lower road, at right, ends at Balch Power House which may be seen in the center of the picture.

Balch diversion dam at Williams Crossing is arch type built of concrete set in a box canyon between two solid granite walls. It is 95 feet high from bed rock, 290 feet long at the crest and contains 5,000 yards of concrete. The base of the dam at crown section is 15 feet thick tapering to 5.6 feet at the crest. Excess water not passing through the tunnel is spilled over the top of the dam, while at the bottom are two 30-inch sluice gates for draining the reservoir. The dam will impound 150 acre feet of water when the reservoir is full. The elevation of the crest of the dam is 4,055 feet above sea level.

The intake to the tunnel mouth located near the dam is a concrete structure cylindrical in form 41 feet high and equipped with rack bars and concrete gates. Provision is made for a 12-foot cylindrical gate to be installed in the future when the dam is raised to its ultimate height.

The tunnel is 19,348 feet long, its cross section being 12 feet by 12 feet, slightly arched at the top. Construction was commenced September 15, 1925, and completed in November, 1926, at a cost of $1,270,000. The solid granite required but 125 feet of concrete lining. It has a capacity of 720 cubic feet of water per second, sufficient to drive four generating units of the present initial capacity of Balch Plant. The intake is 64 feet higher than the discharge end. At the point where the penstock joins the tunnel there is installed a steel manifold 10½ feet in diameter having four 60-inch outlets that provide for additional penstock lines as the plant is increased in capacity. Near the end of the tunnel a forebay or surge chamber has been cut into the granite 158 feet high, 30 feet in diameter at the top and base tapering to 16 feet in the center section. This chamber provides a means of relieving the effect of sudden pressures that may be thrown on the penstock. At the point where the pen-

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The elevation from the river bed to the cliff in the picture is 750 feet. This is only one-third of the total elevation of the penstock line. Power from the plant is transmitted over the line shown in the foreground.

stock joins the manifold an electrically operated butterfly valve controls the flow.

The penstock is 60 inches in diameter at the manifold and is made of rolled steel with welded seams. The diameter is reduced by four-inch increments to 48 inches at a point 300 feet slope distance above the power house where the pipe is divided into two 34-inch lines which pass under the river to the power house. The length of the penstock is 4,882 feet and the difference in elevation between the top and bottom is

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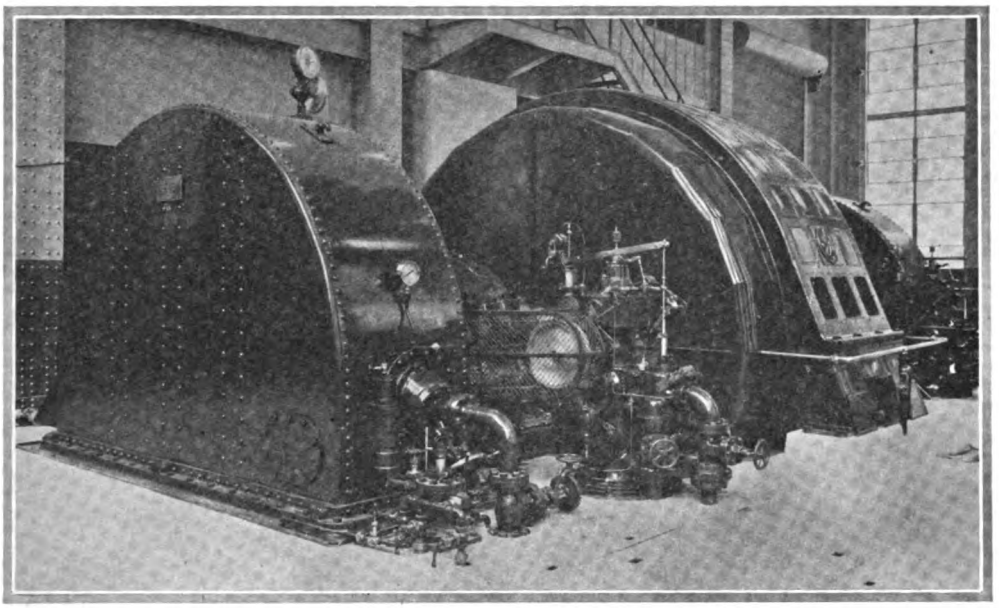

The heart of Balch Plant where the water of the Kings River is converted into power by means of two overhung impulse type water wheels and a 40,000 horsepower generator, the largest single unit of its type ever built.

2,247 feet. The static head of the plant is 2,381 feet, the highest in America at this time.

A feature of the penstock line is the banded section of 2,286 feet. This type of penstock, made in Poland, is reinforced by bands or reinforcing rings placed 4 to 6 inches apart and shrunk on by a special process. The bands vary in thickness from 1⅛ inches to 1 15/16 inches while the maximum thickness of the tube is 1 inch. The pipe is designed to carry a maximum pressure of 1,030 pounds per square inch.

The power house building of structural steel frame and reinforced concrete is 66.5 feet wide, 83 feet long and 57 feet high. It is equipped with a 33,000-kva, 13,200-volt generator driven by two 20,000 horsepower direct connected impulse type water wheels. The rotor of the generating unit, shrunk on to a 22-inch shaft 29 feet 10 inches long, revolves between the water wheels at 360 revolutions per minute.

Operation of the generator and switching of the power are automatically controlled wherever possible. Protective devices are used in control of the water pressure as well as in the generator to provide ample safety factors against sudden pressure rises or electrical disturbances.

A galvanized structural steel high tension switching structure 79 feet high and 180 feet long provides switching facilities to a 39-mile steel tower transmission line connecting with the main trunk lines of the system at Sanger substation.

Construction of Balch Plant was started in March, 1925, following several years' preliminary development work in surveys and road building. Approximately 29 miles of road was built from Base Camp at the junction of the north fork and main Kings River to Wishon dam site at an elevation of 6,500 feet. This road will provide a means for transportation for future power developments on the Kings River Project, reaching all proposed developments on the north fork of the river. The grade at no point is in excess of six per cent which can be negotiated with ease by modern trucks.

Two features in connection with the construction of Balch Plant stand out as notable in undertakings of this size and character. No lives were lost in the building of the plant although much of the work was very hazardous, and the cost of the work came within the original estimate made by San Joaquin Power engineers.

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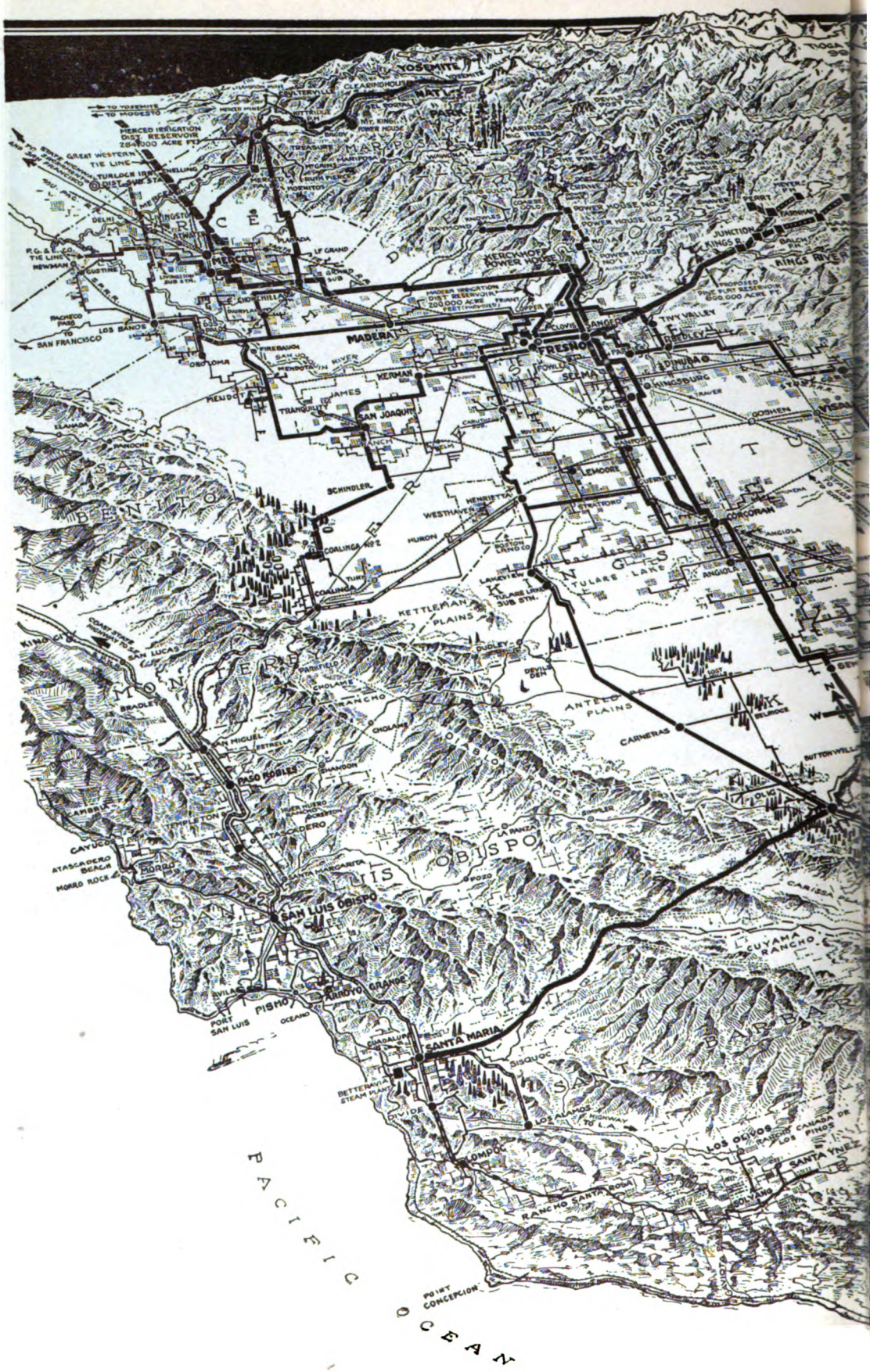

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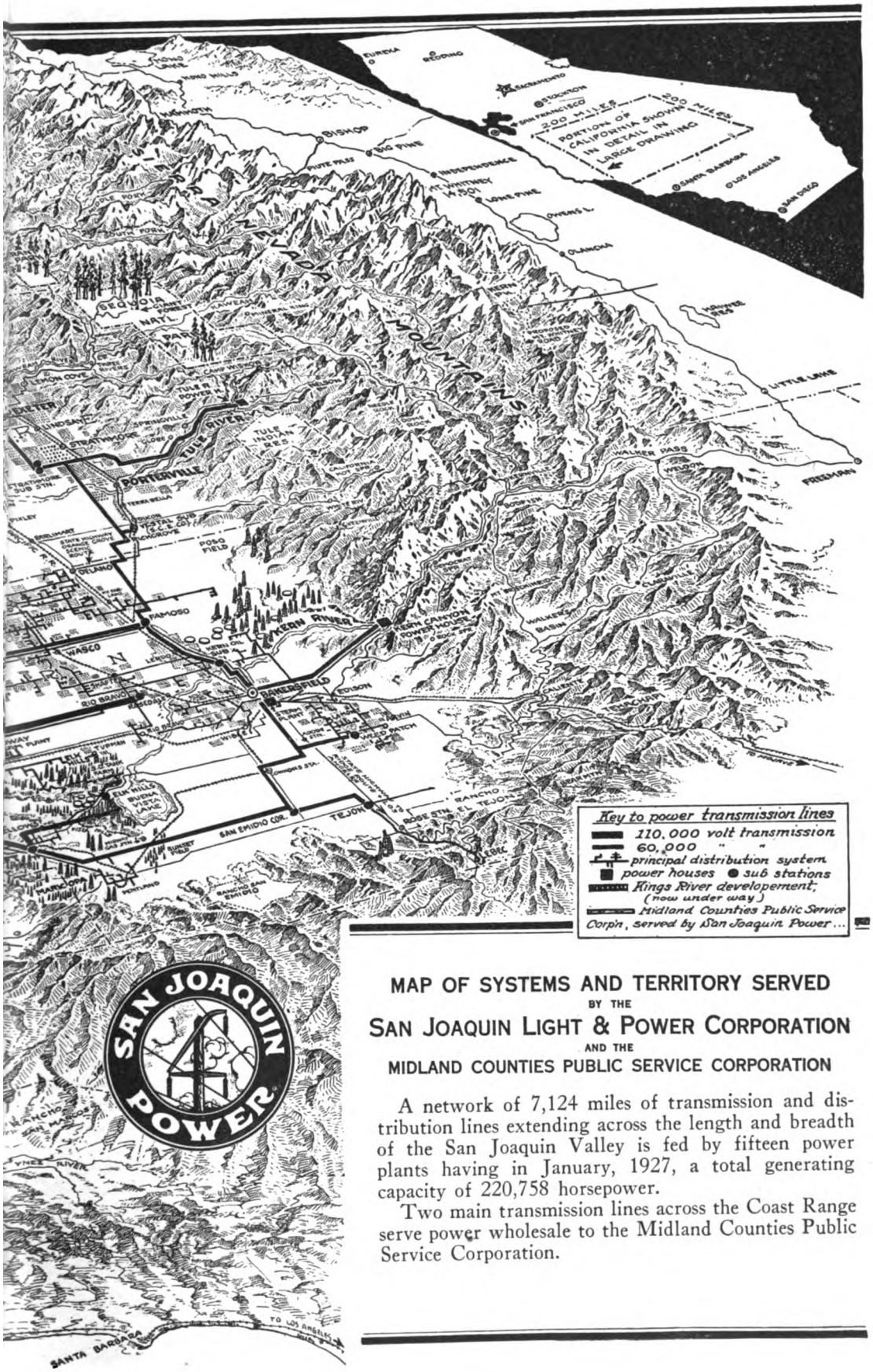

SAN JOAQUIN POWER

MAP OF SYSTEMS AND TERRITORY SERVED
BY THE
SAN JOAQUIN LIGHT & POWER CORPORATION
AND THE
MIDLAND COUNTIES PUBLIC SERVICE CORPORATION

A network of 7,124 miles of transmission and distribution lines extending across the length and breadth of the San Joaquin Valley is fed by fifteen power plants having in January, 1927, a total generating capacity of 220,758 horsepower.

Two main transmission lines across the Coast Range serve power wholesale to the Midland Counties Public Service Corporation.

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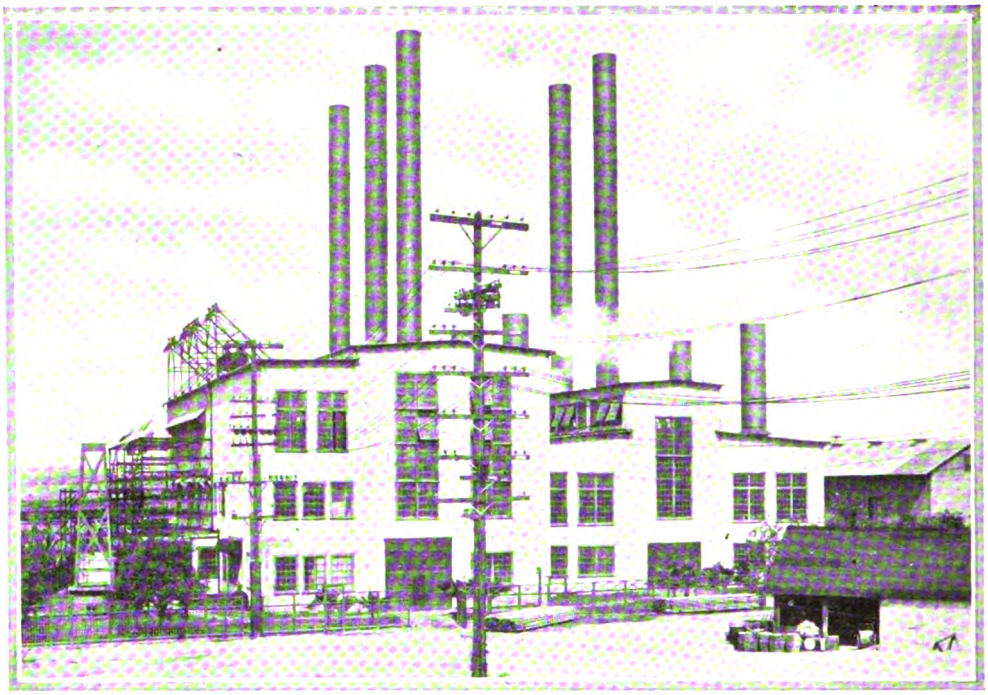

On the plains of Kern County, 25 miles west of Bakersfield at Buttonwillow, the Midway Steam Plant is generating 33,333 horsepower in two units, using as fuel natural gas piped nine miles from the Elk Hills oil fields.

Construction Budget for 1927

THE 1927 construction budget of the San Joaquin Light & Power Corporation provides for a total expenditure of $4,004,300. The completion of the 42,200-horsepower Balch Plant of the Kings River Project providing ample power for the needs of the system made no extensive power development projects necessary during 1927. With power provided the demand now comes for distribution facilities including substations, transmission lines, and other betterments in territories where the load has shown large increases and for the addition of new business to the lines.

A total of $270,515 is estimated to be necessary to complete work already begun during 1926. The major items included in this classification are $200,000 for the completion of Balch Power House and improvements in Bakersfield Steam Plant to stabilize voltage conditions in that territory. Various improvements started during 1926, especially in lines in Bakersfield, Fresno, Lemoore and Merced, together with additional six-inch gas lines in Bakersfield, also are to be completed in 1927.

Among the new projects for 1927 is a regulating afterbay or reservoir to be constructed below Balch Power House at a cost of $179,862. This reservoir will be of the same capacity as the reservoir above Balch diversion dam and by means of regulating gates will make possible a control of the water so that Balch Power House may be operated without affecting the normal flow of the stream. This forebay is installed to prevent interference with the flow of the stream for irrigation. Construction Superintendent H. K. Fox plans to have this dam and reservoir ready for operation before the flow in the Kings River falls below the capacity of Balch Plant.

NEW TRANSMISSION LINES

It is proposed to begin work near the end of the year on the extension of the 110,000-volt line from the new Rio Bravo Substation to the Bakersfield Steam Plant, and the installation of a 30,000 KVA,

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110,000-volt to 70,000-volt substation at the Bakersfield Steam Plant. It is also proposed to provide for the installation of a 20,000 KVA synchronous condenser at Bakersfield. These projects call for an expenditure of $130,000 for the transmission line and $329,400 for the substation and synchronous condenser. Preliminary work only will be done during 1927, calling for an actual expenditure this year of $95,000.

Another major development provides for the construction of a 70,000-volt line from the Merced 110,000-volt substation to Poso Junction on the present Madera-Los Banos 70,000-volt line, and to rebuild the present 70,000-volt line from that point to the old Mendota Substation site. This provides for a total of 25 miles of new copper 70,000-volt line and the reconstruction of 16 miles. This work is estimated to cost a total of $143,480, and will provide for the distribution of power coming into the system at Livingston from the Turlock Irrigation District with the minimum amount of transmission.

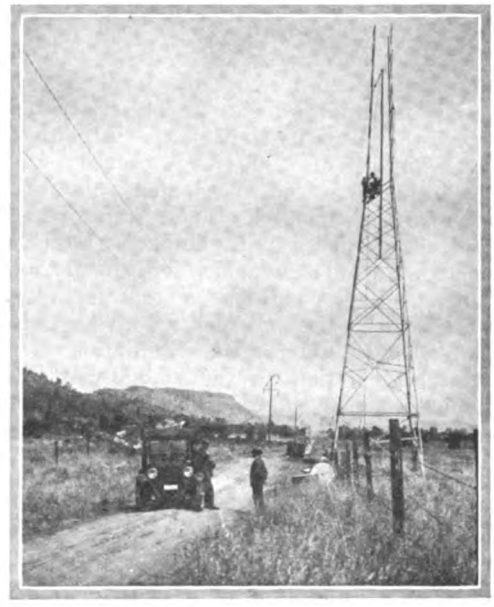
SUBSTATION IMPROVEMENTS

At a point on the new line 13 miles south of the Merced Substation will be installed a new 3,750 KVA substation at El Nido. This substation will be supplied by the new 70,000-volt line and will greatly improve the service to the rapidly growing load in this territory. General Superintendent E. A. Quinn is already distributing poles and material along the line and preparing for immediate construction of the substation. The substation is estimated to cost $65,300.

A number of substations will be increased in capacity during the year, and certain ones will have switches replaced to increase capacity and improve service. The Oro Loma Substation will be increased in capacity from 600 KVA to 3,750 KVA at an estimated cost of $35,250. A new substation of 2,000 KVA capacity will be installed just north of Merced at an estimated cost of $33,650. This substation will supply the new load of 2,000 connected horsepower for the Yosemite Portland Cement Company. It is expected this company will go into operation some time in June.

New 11 KV switches at the Kern Oil Substation will replace the present ones which have been outgrown in capacity at a cost of $43,000. New switches will be installed at Reedley at a cost of $19,850. A new substation of 3,750 KVA capacity will be constructed on the East 70 KV line near the town of Orosi. This substation, which is to be constructed at an estimated cost of $62,000, has been found to be necessary to supply the heavy load which has been built up in this part of the Dinuba district. The load has been rapidly growing during the past few years and has now reached a point where it is impossible to render satisfactory service from either the present Stone Corral or Reedley Substations. The No. 4 Zone Substation in Fresno is to be increased to 1,500 KVA capacity at a cost of $24,800. This increase in capacity is necessary to take care of the rapid growth of load in the northern part of Fresno. The service to Fresno is to be safeguarded further by the installation of an additional bank of transformers at the "O" Street Substation at a cost of $20,000. This substation carries the bulk of the down-town load of Fresno which is rapidly nearing the limit of the substation capacity.

The Kerman Substation is to be increased in capacity to 1,500 KVA at a cost of $17,500. The Lake Side Substation, which was built as a temporary installation in 1925 on the western side of the old Tulare Lake basin, has increased in load delivery



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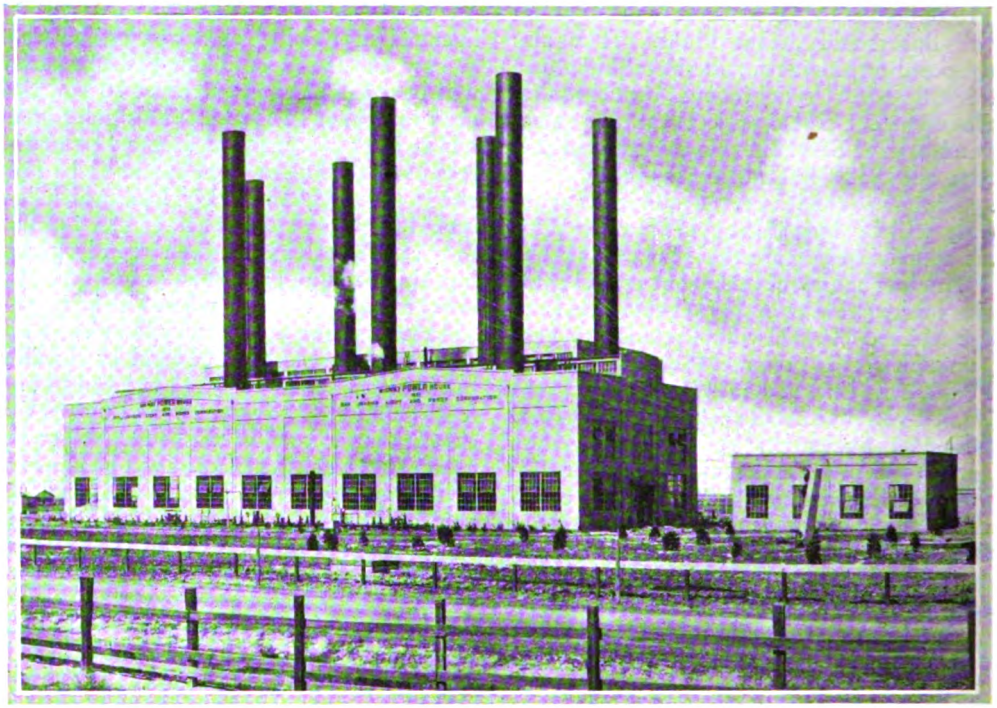

Bakersfield Steam Plant contains three units having a total capacity of 32,800 horsepower. Now using natural gas as fuel, the plant is equipped to burn either oil or natural gas, receiving fuel from Kern County oil fields.

to such an extent that it has been found necessary to install an additional bank of transformers of 1,500 KVA capacity. This is estimated to cost $20,000.

The rapid growth of the load in the Weedpatch section in the southern part of the Bakersfield District has made it necessary for improvements to the service and increase in capacity to be made. A bank of transformers of 9,000 KVA capacity will be installed at the Weedpatch Substation at a cost of $50,000. These transformers will be equipped with automatic voltage changing equipment which will greatly improve voltage conditions in that territory. The budget also provides for an expenditure of $12,000 for the installation of a switching station on the 70,000-volt line which supplies the Weedpatch Substation. This substation will be located on Union Avenue, 11 miles south of Bakersfield.

DISTRIBUTION LINES

The growth of load in the various districts makes it necessary each year to reinforce certain distribution lines and to build new feeders into many districts. The Engineering Department each year makes a study of the service conditions throughout the system and prepares estimates covering expenditures, which, in their judgment, will be necessary to maintain adequate service throughout the system. Naturally, conditions change as the system advances, but with a given increase in business, it is found that usually a proportionate expenditure for such distribution line reinforcements is necessary. For the year 1927 it is estimated that on the San Joaquin system a total of $347,670 will be necessary for such improvements to distribution lines.

The most important lines contemplated at this time include a line from the Semi Tropic Substation into the Pond District north of Wasco. A new feeder is projected west from the Lake Side Substation to the town of Murray, and another feeder into the Lemoore District is proposed from the new substation constructed in Hanford last year. In the Fresno District several items are proposed consisting of a new line from the California Avenue Substation into the district around Bowles. Various improvements in the City of Fresno are pro-

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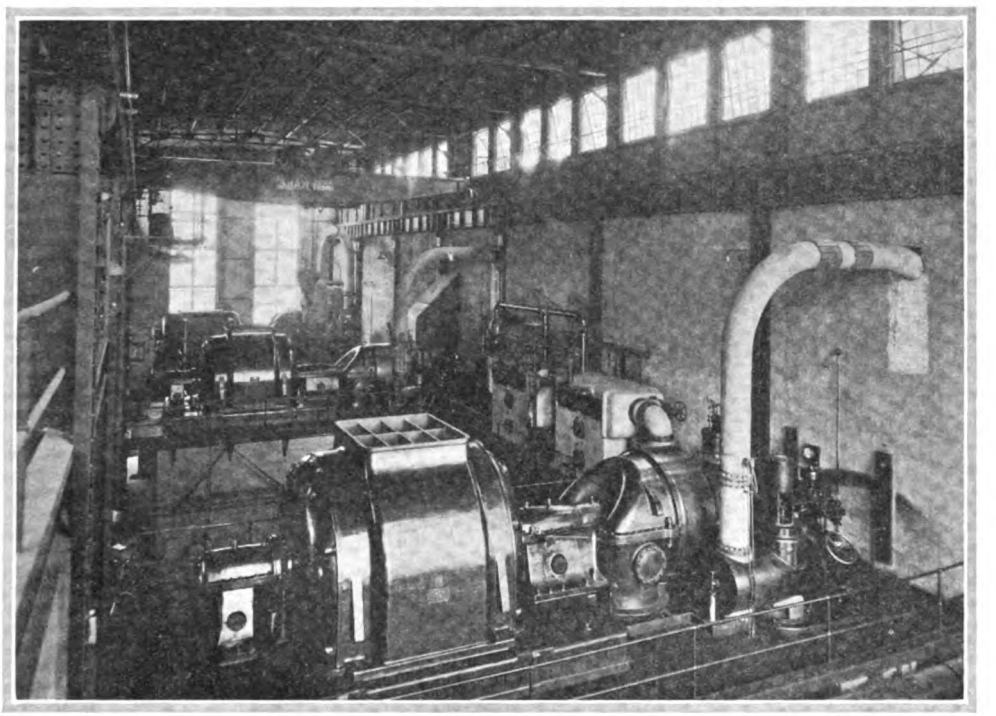

After water is converted into steam by means of eight 275-horsepower natural gas burning boilers in an adjoining room, these three turbo-generators in the Bakersfield Steam Plant convert the steam into 24,500 KW electric power.

jected, including reinforcement of the feeder in the alley between Fulton and Van Ness from Tuolumne to Kern St.

DISTRICT FEEDERS

The Madera District is proposing to construct auxiliary feeders into the town of Madera in order to provide duplicate service and certain improvements in the distribution system in the City of Madera are also contemplated.

In the Merced District, it is proposed to change the wire on the circuit between the Livingston Substation and Gustine, thus improving the service in that district.

In the Taft District a new line is proposed from the Elk Hills Substation to the Honolulu Oil Company to improve service and provide a duplicate feed for that load.

It is estimated that new lines to serve new business will cost $1,903,672. This expenditure is expected to be distributed over the entire system, but the largest expenditures are estimated for the Bakersfield District, which total $403,800, closely followed by Fresno with an estimated expenditure of $387,607.

Improvements to gas service are contemplated in the amount of $73,800 for new mains and changing of some of the present small mains in Bakersfield, and the addition of a new gas generator and washer in Merced at a cost of $6,500. New business for gas in Bakersfield will call for an expenditure of $49,237, and expenditures in proportion in Selma and Merced are estimated for new business.

A new well and pumping plant for the Selma Water Works is included in the budget at a cost of some $5,000. This will improve service in certain districts of the city and improve pressure for fire protection. It is estimated that $19,500 will be spent for improvements and additions to the company's private telephone system. A new office and warehouse is estimated for Corcoran at a cost of $23,000. An appropriation of $15,000 is provided for a new office and storeroom facilities for the Los Banos District. The balance of the $4,004,300 is taken up in the usual items of transportation equipment, office equipment and various other improvements.

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A vast source of potential power lies on the eastern border of the San Joaquin Valley. As this blanket of snow on the high Sierras melts under the summer sun it forms many rivers that fall thousands of feet on their way to the Valley.

The Territory Served by San Joaquin Power

ABOUT eighty three years ago, General John C. Fremont traversed the San Joaquin Valley from Sutter's Fort to Tehachapi Pass, primarily seeking a route across the Sierra Nevada Mountains. His report mentions the Valley of the Tulares, as the San Joaquin Valley was known at that time, merely as incidental in an extensive exploration in the southwest. Yet his description of the great valley during April, 1844, makes an interesting background for the panorama of progress and development that since has taken place.

He told of many beautiful rivers of cool clear water flowing from the snow capped peaks, of a great lagoon and a lake more than forty miles across, of level lands, in many places on the eastern side covered with high grass and flowers, of a great open plain to the west covered with thin grass. Herds of wild horses, elk and antelope roamed the hills and plains while many Indian settlements or rancherias gave evidence of a land of peace and plenty.

The San Joaquin Valley of that time was many days travel from centers of settlement at Monterey and Santa Barbara. Mountains surrounded three sides,—the high Sierra Nevada range to the east, the Tehachapi range on the south, and the Coast range on the west. Passes through these mountains were rough and dangerous. Only by way of the northern route, following the San Joaquin river to the sea, was access to be had by means of wagons. This great potential agricultural paradise, 200 miles long and 80 miles wide, no doubt would have waited many years for settlers were it not for the discovery of gold at Sutter's Mill in 1849.

The gold rush brought thousands of farmers from the Middle West, many of whom, failing in the search for gold, found ample treasure in supplying food for the rapidly growing cities that sprang up like

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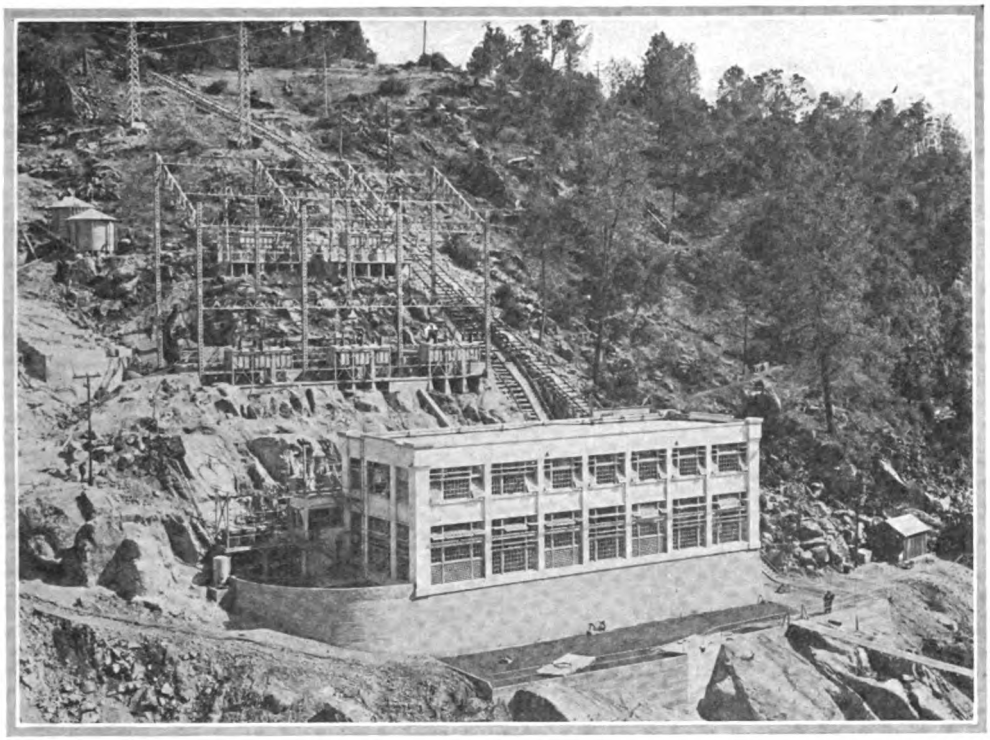

Kerckhoff Power House, 48 miles northeast of Fresno in the canyon of the San Joaquin River, generates 52,300 horsepower in three units operating under a head of 350 feet. Water for the plant comes through a tunnel from Kerckhoff Lake.

magic in the hills along the eastern margin of the valley. Herds of cattle and droves of sheep within a few years were crowding the wild animals from the ranges; small farms dotted the water courses, and actual settlement of the valley began.

VAST NATURAL RESOURCES

While the Mother Lode and the creek beds bordering the great valley on the east yielded untold wealth in gold, it remained for the pioneer tillers of the soil to open up a new source of wealth beside which the treasure vaults of quartz ledges and creek beds fade into insignificance. The peak of gold production was reached in 1854 when $80,000,000 was taken from California mines in one year. For many years the annual value of products of the soil from the San Joaquin Valley have exceeded that figure and the maximum production is far from being reached.

The streams of cool, clear water now are sources of power in the high mountains and are distributed over hundreds of thousands of acres on the low lands through irrigating canals. The lakes and marshes of Fremont's day have been dried up and made to produce bumper crops of grain, forage and fruits. Tulare Lake now is a mere pond that for the greater part of each year is dry. Great irrigation works have been built and others are in prospect which will conserve the flood waters during winter and spring to give greater distribution and prolong the season of irrigation.

In addition to normal stream flow there remained yet another source of water that has greatly added to agricultural development. Underlying large areas are vast sources of ground water that awaited only an economical and efficient means for lifting it to the surface. Into this agricultural empire, 31 years ago, entered the San Joaquin Electric Company, an organization that was destined to play an important part in the development of the San Joaquin Valley.

EARLY HISTORY

In the pioneer days of San Joaquin Power demand was almost exclusively for

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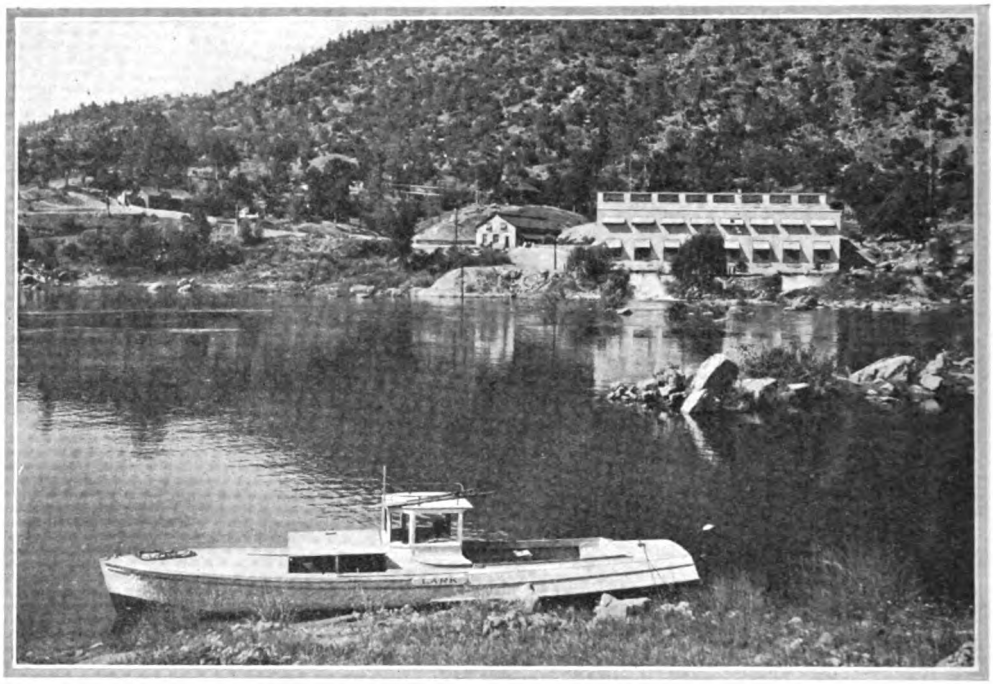

San Joaquin Power House No. 1, 22,800 horsepower, on the San Joaquin River 50 miles northeast of Fresno, is the largest plant in the Crane Valley System. It has four impulse type units operating under a head of 1,412 feet.

lights, power being served to a few industrial motors. Records show that in 1896 when the first hydro plant was put into operation on the San Joaquin River the company supplied current for but 165 arc and 5,000 incandescent lamps, and 460 horsepower in motors served only in Fresno, then a city of 15,000. No agricultural pumping was being done electrically. Originally the system consisted of only one plant with a capacity of 1,400 horsepower. This plant was notable for having a head of 1,400 feet, the highest in its time and was the first in the world to transmit electricity for power as far as thirty-six miles. The transmission line was extended in 1900 to Hanford where the power was sold wholesale to a local distributing company.

In 1902 a group of Los Angeles financiers purchased the original San Joaquin Electric Company and formed the San Joaquin Power Company, planning a gigantic generating and distributing system to supply the San Joaquin Valley with light and power. This new company brought into the organization as general manager Mr. A. G. Wishon, who had sold the first electrically driven farm pumping plants in Tulare County while manager of the Mt. Whitney Electric Company.

The advent of Mr. Wishon in the electrical industry marked the dawning of a new day for the extension of service to farms and cities of the San Joaquin Valley. He brought with him valuable experience that was used in demonstrations of farm pumping to farmers in Fresno and adjacent districts. This new phase of the electrical industry opened up tremendous possibilities for the sale of power which at that time were seen by the men of vision directing the destinies of the new company.

COMPANY GROWS

The extensive plans of the management seemed visionary to financiers and business men of 1903, but the faith of the promoters was soon justified. The first estimates for plant capacities and line extensions proved inadequate in the face of the rapid increase in demand for electricity, and it soon became evident that a larger company must be formed to carry on the work. Increased capitalization was necessary to finance

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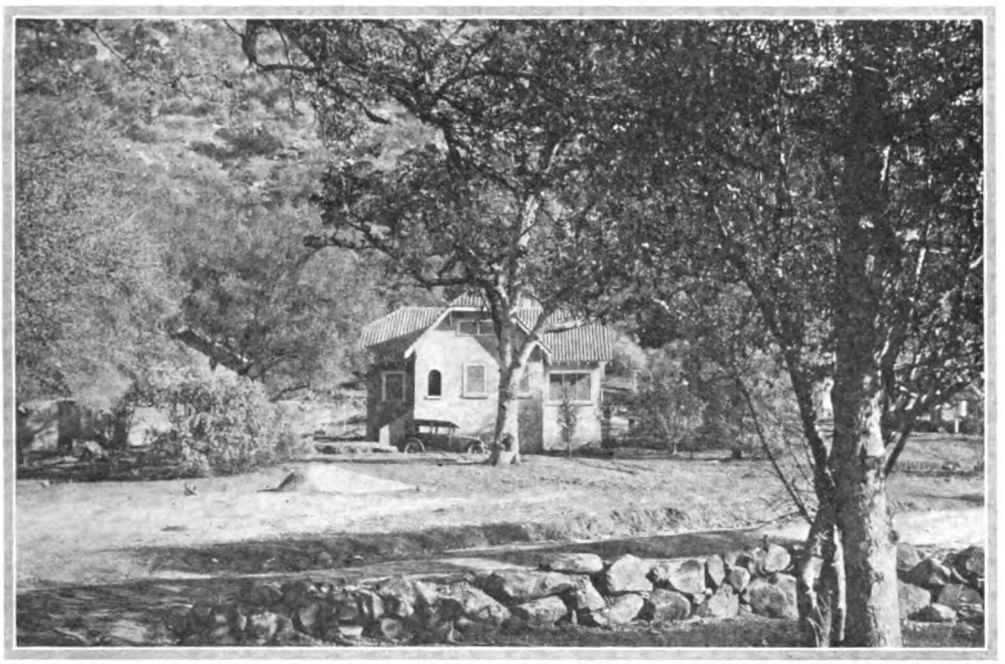

In a setting of oaks and manzanita the homes of resident operators of Balch Power House form an attractive village of seven red-tiled roofs and gray walls at the confluence of the North and West Forks of the Kings River.

more generating plants, and in 1906 the capitalization was increased from $800,000 to $3,000,000. Plant capacities were increased and a campaign launched to sell power for pump irrigation in the districts of Madera, Selma, Fowler, Reedley, Dinuba, Lemoore, Laton, and Corcoran, to which cities lines were extended. Lines were further extended in 1908 to the Coalinga oil fields, where it was first demonstrated that oil could be pumped by electric power at a lower cost than by steam or oil engines.

Again the company had outgrown its capitalization and additional financing was necessary. On July 19, 1910, the present San Joaquin Light and Power Corporation came into being. Additional operating plants and territory were acquired through the purchase of the Merced Falls Gas and Electric Company in Merced County, and the Power Transit and Light Company, comprising all the electric, gas and street railway properties in and around Bakersfield. Five power plants with but 9,000 horsepower capacity supplied the system in 1910.

The building program of the newly formed San Joaquin Light and Power Corporation began with the construction of the Crane Valley Dam and the installation of two generators and water wheels in the new No. 1 Power House on the San Joaquin River. This brought the system's total generating capacity up to almost 20,000 horsepower, yet this was not sufficient to supply the rapidly increasing demand for power for farm pumping and other uses, and an auxiliary steam plant of 1,000 horsepower was built in Bakersfield. This plant was increased to 3,300 horsepower in 1910 to replace the plant capacity lost through dismantling the original No. 1 Power House, which had become obsolete. Tule River Plant of 6,850 horsepower went into operation early in 1914. San Joaquin No. 2 Plant brought in 4,000 horsepower in 1917, and by 1918 the system had grown to a capacity of 65,000 horsepower.

GREAT GROWTH FOLLOWS WAR

During the war period construction was curtailed, but the demand for power increased tremendously, making necessary

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immediate power development on a large scale.

The Kerckhoff hydro-electric plant of 52,300 horsepower was rushed to completion in fifteen months, and put into operation August 7, 1920. During this period a new unit was installed in the Bakersfield steam plant, coming into operation in July, 1920. These improvements made necessary a new main transmission line extending the full length of the valley from Merced almost to Bakersfield.

Although the capacity of the system was thus more than doubled in two years, the demand for power continued, and in 1921 the old Kern Canyon Plant was enlarged and another auxiliary steam plant constructed in the Midway oil fields, bringing the total generating capacity of the system to 178,558 horsepower.

ADDITIONAL POWER

Additional sources of power have been made available during the past year through the 105-mile Merced-Brighton tie line and Wilson Substation at Merced, bringing together the generating plants of the San Joaquin Light and Power Corporation and the Great Western Power Company. This inter-connection of two great systems was made possible through the purchase of the San Joaquin Light and Power Corporation by the Western Power Corporation, which later became a part of the North American Company. The output of the 25,000 horsepower hydro electric plant of the Merced Irrigation District and 10,000 horsepower of the Turlock Irrigation District also is distributed by San Joaquin Power through a purchase agreement.

The addition of 42,200 horsepower through Balch Plant brings the total generating capacity to 220,758 horsepower.

Accompanying the development of power plants 7124 miles of transmission and distribution lines have been built, spreading like a network across the valley which less than fifty years ago was a wilderness.

TERRITORY SERVED

The territory served by the San Joaquin Light and Power Corporation extends from the northern boundaries of Merced County to Lebec in the Tehachapi mountains of Kern County.

Included in this territory are the counties of Mariposa, Merced, Madera, Fresno, Tulare, Kings and Kern. In supplying all of the current distributed by the Midland Counties Public Service Corporation, the San Joaquin System serves also the southern part of Monterey County, all of San Luis Obispo County and the northern part of Santa Barbara County.

In these counties are grown agricultural products ranging from sub-tropical citrus fruits to practically everything grown in the temperate zone. Because of the many warm sunshiny days, the San Joaquin Valley is particularly adapted to the production of grapes, figs, apricots, peaches and cotton, all of which are of high quality.

Fruits are dried in the sunshine without resort to artificial means, although electric dehydration is coming into a wider use each year for special and fancy packs. The San Joaquin Valley produced last year 98 per cent of the peaches and 99 per cent of the apricots canned in the United States, and 95 per cent of the raisins consumed in the United States. Because of the high quality of Sun-Maid raisins, foreign demand has greatly increased during the past five years, providing additional outlets for this important crop.

Fruit packing, processing and shipping is an important industry depending on the agricultural resources of the San Joaquin Valley, thousands of workers finding employment each season in hundreds of plants distributed throughout the valley. Electricity is an important labor saving element in the packing industry. Practically every plant has a battery of motors, while many use electricity for heating purposes in cooking and processing fruits and vegetables.

DAIRYING

Dairying and stock raising have long been among the leading sources of income in practically all territory served by the San Joaquin Power system. Many fine herds of high grade and thoroughbred cows are raising the milk production per cow to a level with the highest in the United States. Cow testing associations and importation of fine bulls are improving herds and further increasing production of butterfat to a point where new records are in sight within the next few years. Creameries, milk canneries, dried milk plants, and casein plants are important manufacturing adjuncts to dairying that greatly increase the value of dairy products and pro-

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San Joaquin Power Building, Fresno, California

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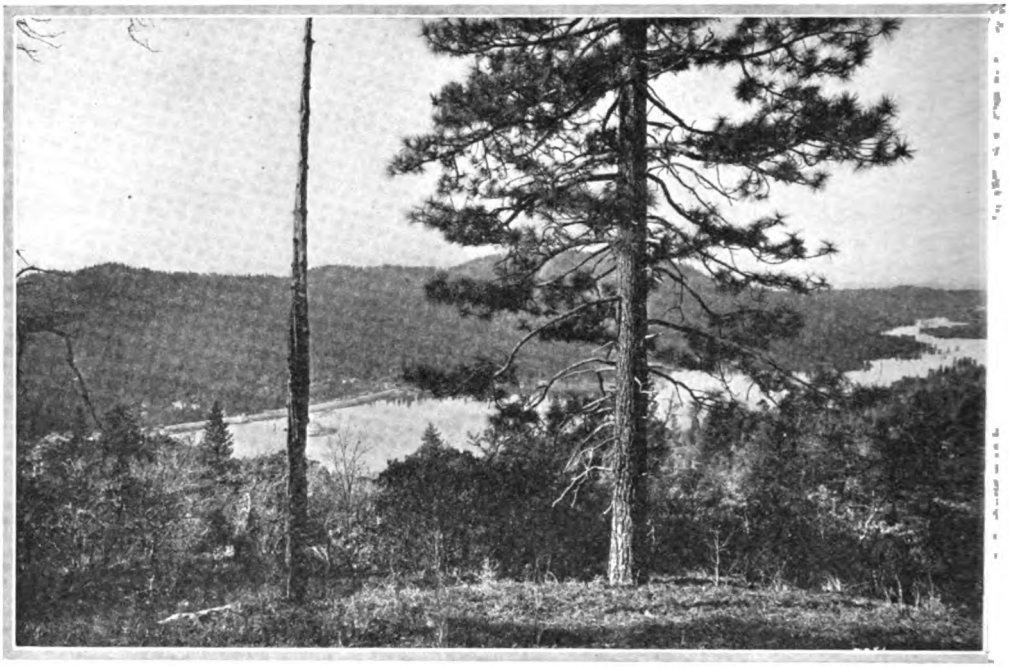

A dam 150 feet high and 1,880 feet long across the North Fork of the San Joaquin River forms the Crane Valley reservoir of 45,000 acre feet capacity. This source of water supply operates the five power houses of the Crane Valley System.

vide an outlet for all milk produced in the valley.

DIVERSIFICATION

Diversification of crops, scientific handling, processing, packing and marketing of products are subjects receiving constant attention through agricultural organizations, university extension services and individuals who appreciate the importance of these phases of agriculture. Nowhere in the world has co-operative marketing been developed to the high plane reached in California. Research and scientific study of farm problems is being encouraged by Chambers of Commerce, bankers, and leading citizens throughout the San Joaquin Valley, building toward a sound foundation that will assure constant healthy growth until the maximum of production has been achieved.

VAST OIL RESOURCES

While agriculture is of first importance in the territory served by San Joaquin Power it is by no means the sole source of income. Oil fields in Kern County, Fresno County and Santa Barbara County have an annual production of 65 million barrels. Electricity is used extensively in all of these fields for pumping, drilling, dehydration and shop operation.

MINING

Large deposits of building granite are quarried by electrically operated equipment at Raymond in Madera County, while electricity enters extensively into mining operations in Mariposa and Madera and other counties served by San Joaquin Power. Lumbering in Madera County, where upwards of 120 million feet of high grade mountain pine are cut each year, is carried on by electric power. Deposits of limestone in Mariposa County soon will be shipped to Merced, where the Yosemite Portland Cement Company is erecting this year a 2,500 barrel mill to be electrically operated.

COAST COUNTIES

In the Midland Counties territory are extensive deposits of diatomaceous earth, the largest being at Lompoc where the Celite Company is using 3,000 horsepower in electric motors for quarrying and processing its product. Celite is used as insulation and for many abrasive purposes.

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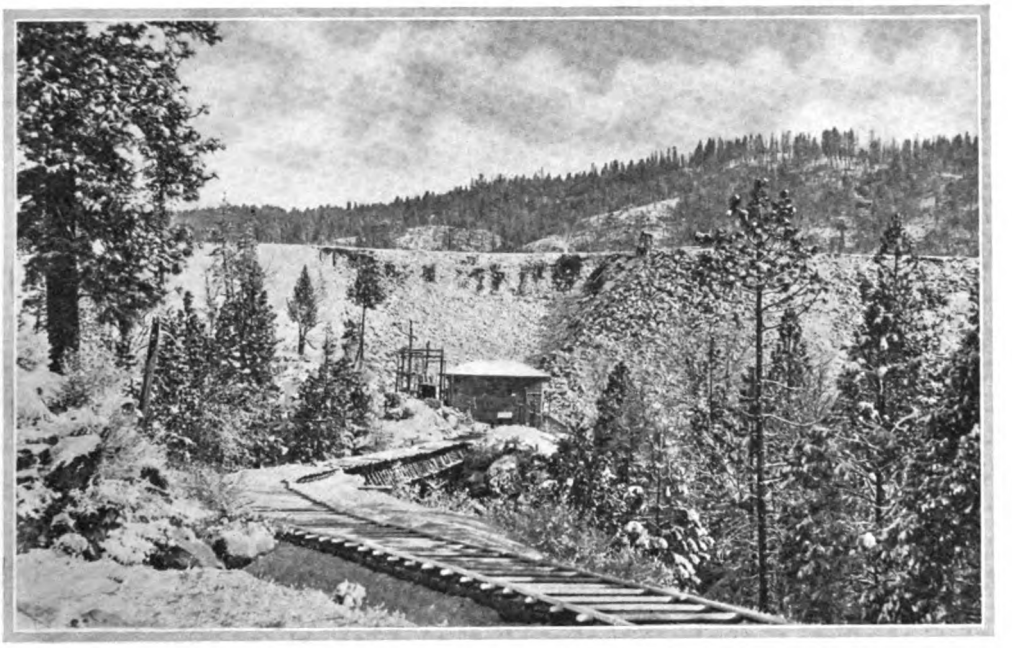

Just under Crane Valley dam is the picturesque Crane Valley Power House of 1,070 horsepower capacity, using water in the development of power for the first time as it leaves the reservoir. Four plants below complete the system.

Brick, tile and lime are products manufactured from suitable deposits found in various parts of the territory supplied by San Joaquin Power. Other extensive mineral deposits are known to exist in the mountains surrounding the San Joaquin Valley and only await an opportune time for development.

PROSPEROUS VALLEY CITIES

While the foothill cities of the days of gold waned as the deposits were exhausted, large settlements dwindling away to a mere handful of inhabitants, other cities laid on the firm foundation of agriculture have grown up in the valley. Prosperous communities dot the landscape over the entire length and breadth of this great inland empire. San Joaquin Power system now serves 147 towns and cities having a total population of 400,000. Everywhere is seen the glow of the electric light, the whirring motor, the silent labor-saving electric servants in homes. Visitors to the San Joaquin Valley often express surprise at the progressive cities and the many fine farm homes.

These cities and farm homes have a per capita use of electricity among the highest to be found anywhere in the world. Electric cooking is coming into general use throughout the country districts and other electrical conveniences provide comforts equalling those found in the cities.

RESORTS AND PLAYGROUNDS

Adjacent to the San Joaquin Valley are playgrounds in the mountains that have a national appeal, attracting thousands of visitors each year. Valley residents are within a few hours' drive over paved highways to mountain and seaside resorts that provide all-year recreation. Half way between two great cities, reached in a few hours, the Valley has access to the best the world's markets afford and, in turn, outlets for millions of dollars worth of produce.

The future of the San Joaquin Valley and the Coast counties of Central California is assured. Diversity of agricultural products provides a stablized income while mining, oil, lumbering and manufacturing also are constant and growing sources of wealth that add to revenues. Undeveloped resources are here in abundance, and electricity is playing an important part in their development.

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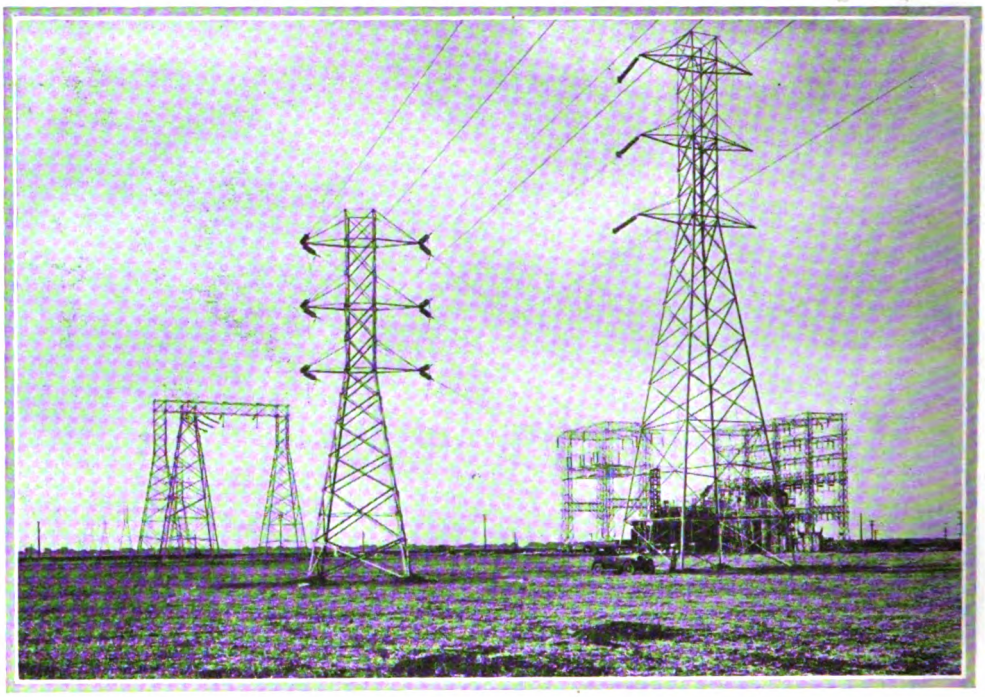

Wilson Substation, on a forty-acre site four miles east of Merced, is the southern end of a transmission line which extends 105 miles from Brighton Substation near Sacramento and which is the largest interconnecting link in California.

Largest Interconnecting Link in the State

CONTACT between the generating systems of the San Joaquin Light & Power Corporation and the Great Western Power Company is made through a transmission line 105 miles long which terminates at the north at Brighton Substation and at the south at Wilson Substation, near Merced. This tie line has been used to the distinct advantage of the affiliated companies since coming into operation in July, 1926, amply demonstrating the efficiencies and economies to be gained from grouping diversified loads. The transmission line and Wilson Substation represent an investment of $2,750,000.

This substation located on a 40-acre site at the northern gateway of the San Joaquin Power System connects with a main 110,000-volt trunk line which traverses the San Joaquin Valley and forms a continuous bus line from Wilson Substation to Santa Maria Substation, a distance of 276 miles. It provides a means of exchange of surplus power as well as a source of power for either system in emergencies. Two systems, having a total generating capacity of 441,758 horsepower, are tied together by this interconnection.

Current for the substation is now coming in at 165,000 volts, which will later be increased to 220,000 volts. The capacity of the substation is 90,000 kw or 120,000 horsepower, with provision for increasing this capacity to 240,000 horsepower. This is the largest link in the interconnection of California power companies.

In physical dimensions the transformers at the Wilson Substation are the largest ever built. This is the declaration of the engineers of the General Electric Company, which built all the machinery for the plant. The transformers are 28 feet 3 inches high, 22 feet long, 14 feet 9 inches wide over all. The core and coils weigh 78,000 pounds, the tank and fittings 63,000 pounds and the oil 120,000 pounds, the total weight of each transformer being 261,000 pounds. More than 16,650 gallons of oil

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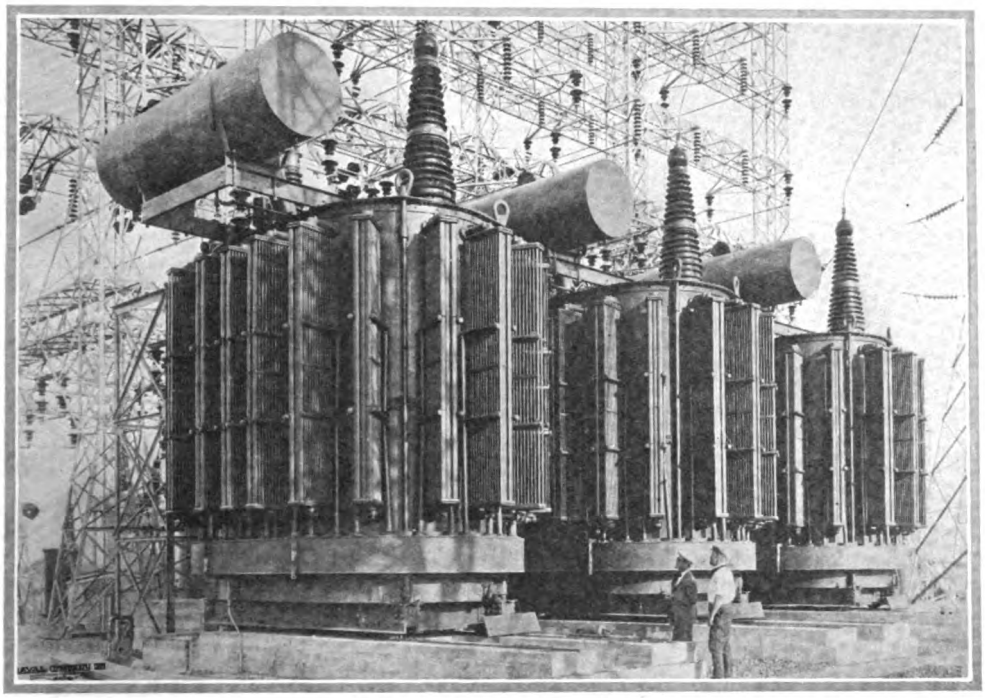

These giant 165,000-volt transformers at Wilson Substation are the largest of their type ever built, having a capacity of 120,000 horsepower with provision for increasing the capacity to 240,000 horsepower, and the voltage to 220,000.

are required to fill each transformer. Two auxiliary tanks, having a capacity of 16,450 gallons of oil as a reserve, are mounted on concrete saddles near the condenser building.

In another respect, too, the transformers are unique. Four in number, one being an extra for emergency service, they are designed to operate at a maximum voltage of 220,000. The actual test voltage, however, applied to the windings was 481,000 volts. This is declared to be the highest test voltage yet applied to any commercial transformer.

A new device has been applied to the cooling system which permits air to be blown through the radiators from a large fan. A fifty-horsepower motor is required to drive this fan, delivering 8,000 cubic feet of air per minute at a four-ounce pressure to each transformer. Even if the air supply should be cut off the transformers will nevertheless carry 57 per cent of their load capacities. These capacities are 24,000 kilowatts for the 220,000-volt winding, 30,000 for the 125,000-volt winding, and 40,000 for the 10,640-volt winding.

The leads from the 10,640-volt winding from the transformers to the substation building consist of three 750,000 c. m. three-conductor lead covered cables. These cables are insulated for operation of 15,000 volts and are the largest cables of this voltage ever manufactured. Special dies for the cable drawing machinery had to be made for their manufacture.

Most imposing of all the structures constituting the substation is the condenser building, built at this time to accommodate two 25,000 synchronous condensers. The structural steel and concrete building, 88 by 79 feet, 56 feet high, is so planned as to permit of an addition of equal size, giving enough space for two more condensers with the necessary control and switching equipment. The building is equipped with a 75-ton crane for handling the heavy transformers in the event of repairs being necessary, and a smaller 5-ton crane.

In the substation yard are two modern electrically complete residences for operators and their families. The water supply for the plant is supplied from a well pumped into a 150,000 gallon tank.

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San Joaquin Light and Power Corporation

A Few Statistics as of December 31, 1926

1,692	employees in all departments—operating and construction.
24,737	bondholders and stockholders.
34,945	square miles in which company operates, comprising 10 counties in Central California wholly or partially served—Mariposa, Merced, Madera, Fresno, Kings, Tulare, Kern, Monterey, San Luis Obispo, Santa Barbara—with a population of 490,000.
81,797	gas, water and electric consumers.
151,292	horsepower developed in 12 hydroelectric plants. (Including 42,200 horsepower in Balch Plant completed January 29, 1927.)
69,466	horsepower developed in 3 steam plants.
220,758	horsepower developed in the company's 15 plants.
42,225	horsepower generating capacity contracted for under long term contracts.
623,690,150	kilowatt hours total output of system in 12 months ended December 31, 1926.
721,993,800	cubic feet of natural and manufactured gas sold in three cities during 12 months of 1926.
7,124	miles of electric transmission and distribution lines.
174	miles of main used in distribution of gas.
19	miles of main used in distribution of water.
2	cities supplied with power for electric railways.
16,315,100,000	gallons storage capacity for water used in generating electricity.
3,703,537,000	cubic feet of natural gas used in generating electricity during 12 months ended December 31, 1926.
119,246	horsepower of agricultural motors depending on San Joaquin Power, irrigating more than 657,000 acres of land.
72,406	horsepower of industrial motors operated by San Joaquin Power.
29,326	horsepower of oil well motors operated by San Joaquin Power.
348,774	horsepower total connected load.
$3,426,032.95	wages paid employees in 1926.
$849,158.81	taxes paid in 1926.

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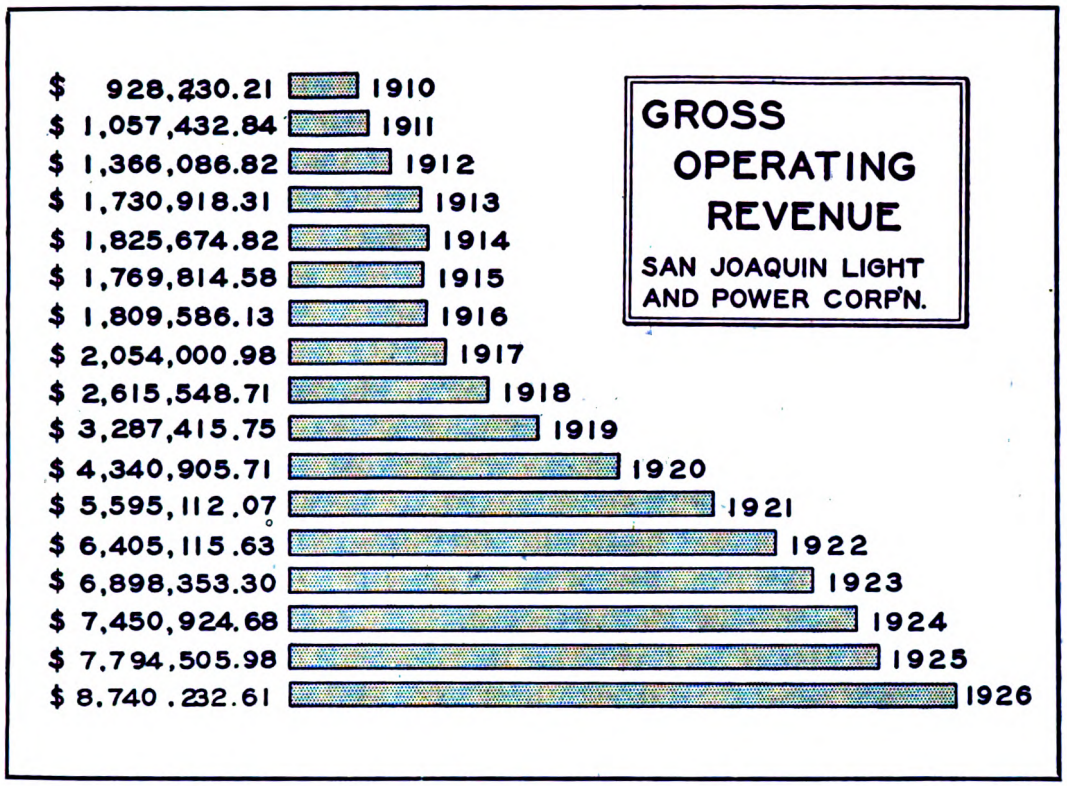

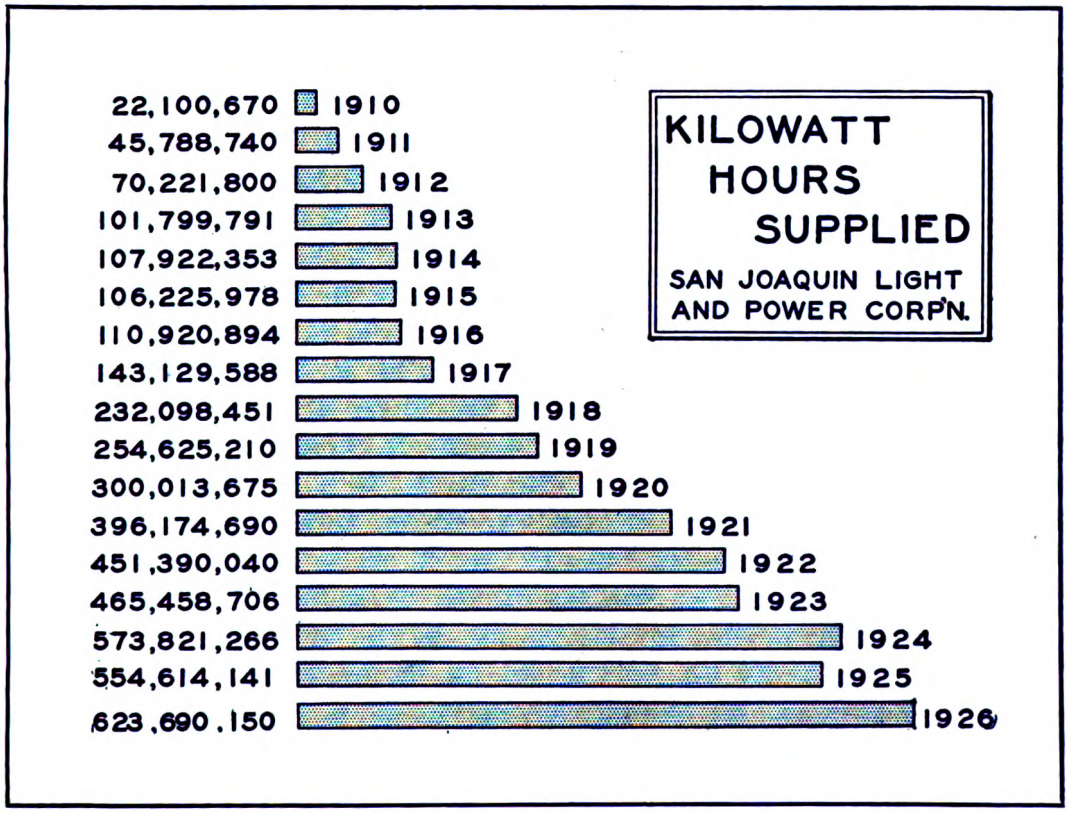

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Anybody can be a partner

OWNING public utility stocks and bonds used to be regarded as the privilege of rich people only.

California power companies changed that. The service is everybody's and anybody's, and everybody and anybody should have the privilege of ownership in it.

Fourteen thousand of our customers are partners in San Joaquin Power. Some own but one share, some many shares. They are not all rich people—they include wage earners, farmers, doctors, lawyers, small business men, housewives, minors. They have put millions of dollars of their savings into this business, making possible new power plants, substations, transmission and distribution lines, and continually better service at low cost.

San Joaquin Power 6% Prior Preferred Stock may be bought on term payments. Every Employee is a stock sales agent.

SAN JOAQUIN LIGHT AND POWER CORPORATION

FRESNO, CALIFORNIA

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